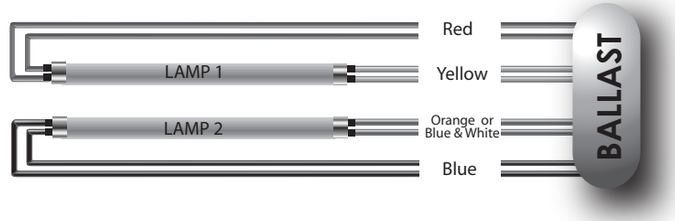
WARNING!

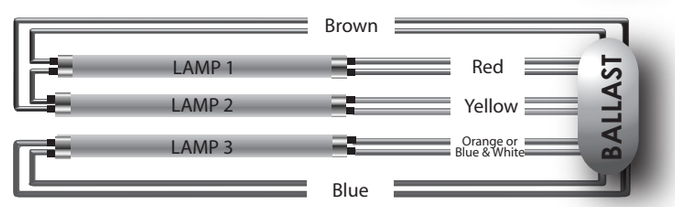
1) It is the responsibility of the user to confirm the retrofit kit, lamps, connectors, sockets, plugs, and electrical outlets are free from all moisture, salt, or other foreign material/buildup common around aquariums. Failure to do so may result in electrical hazard and unsafe conditions for personal and property.
2) Operate unit behind glass or acrylic or within an appropriate housing where lights are protected from excess humidity.
3) Do NOT operate directly over exposed tank/sump/refugiums/water/etc.
4) Install in accordance with the National Electronic Codes for Safe Operation.
5) Always unplug the light unit before working on or in the aquarium or any related aquarium equipment near the light fixture (i.e. sump, skimmer, pumps, refugiums, algae scrubber, etc.)
6) If any cords are damaged, do not operate.
7) Do not plug into an extension cord. Plugging into surge protector device is recommended.
8) If any part of the fixture/ballast ever falls into water, unplug the unit before you attempt retrieval.
9) Light fixtures are intended for indoor use only.
10) Place ballast away from any humid area (i.e. above the sump) or high temperature areas (i.e. sunlight, near lamps, near the chiller exhaust, etc).
11) Warranty is void if above instructions are not followed. User agrees that the ARO ballast manufacturers total liability, under any legal theory or claim, shall be limited to the purchase price actually paid for the product giving rise to manufacturers liability.

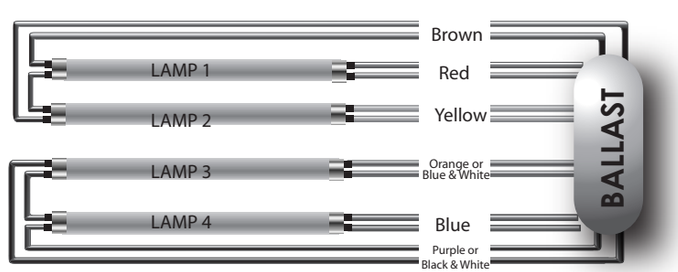
USAGE OF DIAGRAMS

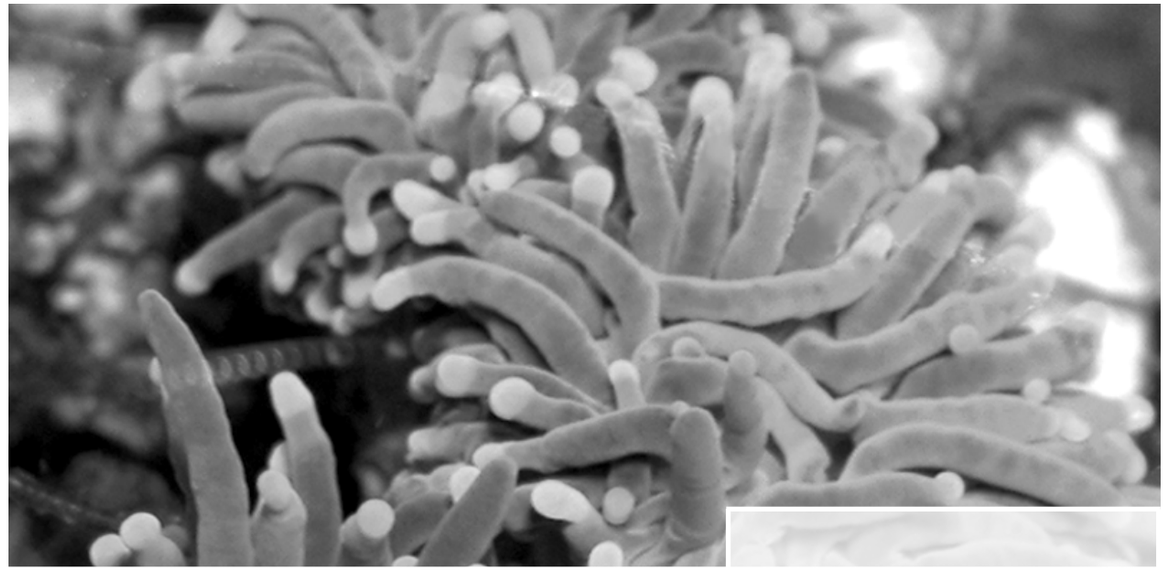
1. Wiring diagram provided for information only.
2. Warranty void if wire harness is modified by user.
3. Must use ARO pre-wired wire harness.
4. Contact Vendor for pre-wired harness with end caps.

Total Lamp Length	16 ft. max
Lamp Configurations	
4 x 2 feet lamps 4 x 3 feet lamps 4 x 4 feet lamps	







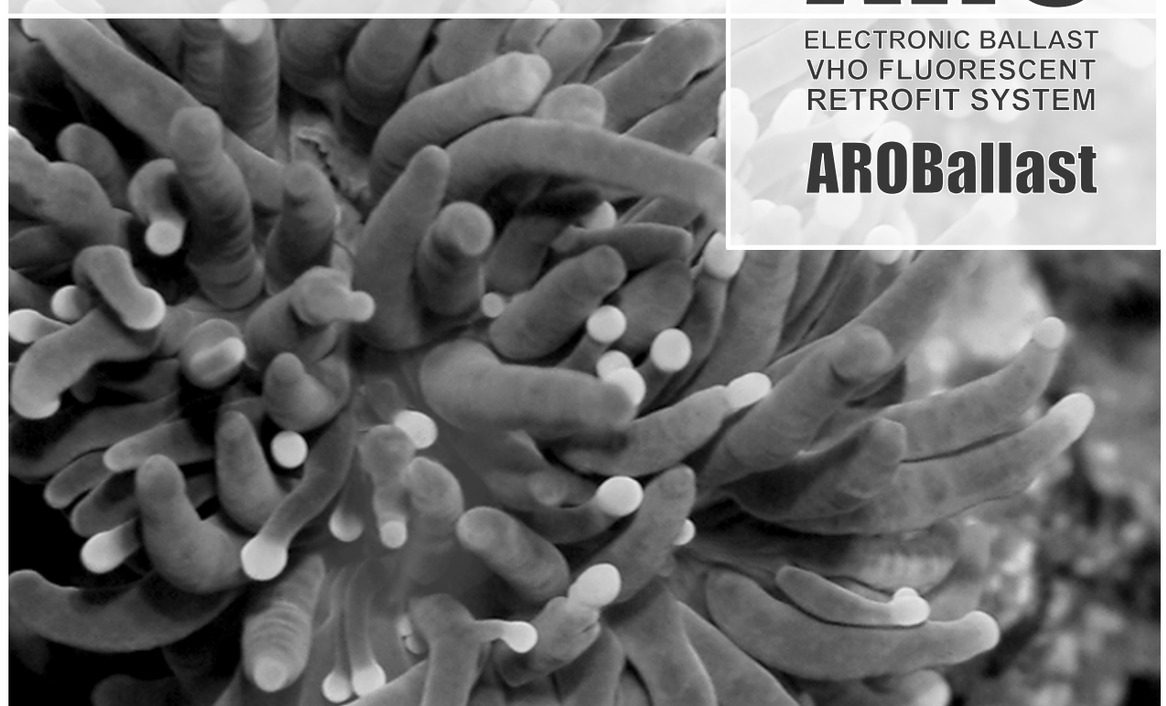


VHO User Manual

ARO

ELECTRONIC BALLAST
VHO FLUORESCENT
RETROFIT SYSTEM

AROBallast



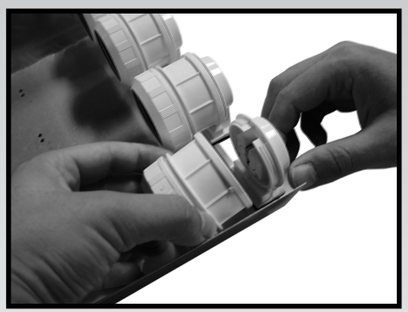
installation instructions

Please read all installation instructions prior to beginning installation.

1.

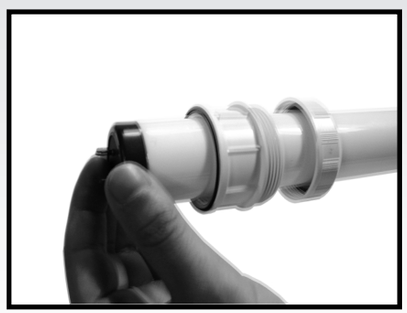
Disconnect the line voltage (by unplugging the ballast cord from the wall outlet and turning the ballast off) before installing or replacing the ballast or lamps. Always turn the ballast off before making any adjustments.

2.



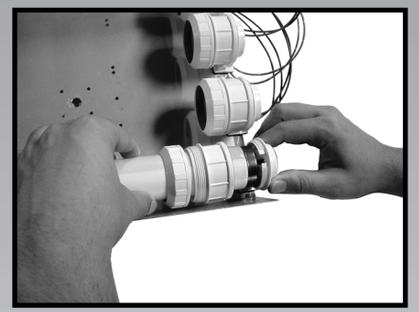
For both lamp ends, unscrew endcap sleeves from endcap contact housings.

3.



Slide both endcap sleeves onto lamp with threads facing out towards mounting lamp pins.

4.

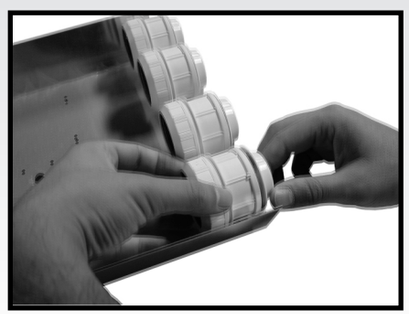


Use screwdriver to align the slot for the lamp pins. Slide lamp pins into slots in endcap contact housing.

5.

Rotate lamp tube 90 degrees (2 clicks) until pins make secure contact. Make sure the pins of the vho lamps are in full contact with pin contact ring, housed within the moisture proof endcap. This will ensure proper ballast operation. Check to assure that the lamp is seated snugly between the endcaps. If not, then adjust the endcap by loosening screws and moving the endcaps.

6.



Screw the endcap sleeve back onto endcap contact housing until secure.

7.

- Before applying power to the ballast, check that all connections are secure.
- Do not apply power to the ballast before all of the lamps are properly installed.
- Protect the ballast from direct exposure to water, moisture, and heat. (For aquatic applications place ballast in a location with sufficient air flow to permit cooling. In addition, the ballast should be mounted above the waterline. Where possible, mount ballast on a metal surface. In all applications, avoid mounting the ballast inside a light fixture next to the lamps.)
- If all of the lamps do not light within a few seconds, turn off the ballast. Reexamine all connections. (Our electronic ballast has an internal shutdown protection circuit which detects defective lamps or improper connections to the endcaps. The ballast will not operate until the circuit is corrected and the power is re-applied. Once shutdown occurs, the ballast will reset to original settings within a few minutes.)
- Do not operate the ballast with an incomplete circuit. (Note that an incomplete circuit could be caused by a defective lamp or a lamp improperly seated in an endcap. Also note that an improperly seated lamp will not flash when power is applied to the ballast.)
- All lamps must be installed to operate properly.

troubleshooting

Always disconnect the power before making adjustments.

1. Lamps will not turn on.
   -Are all lamps securely in place?
   -Is the on /off switch in the "ON" position?
   -Is the harness properly connected to the ballast or endcaps?
   -Are the endcaps mounted to ensure good contact with the lamps?

2. All the lamps flash and go off.
   -Turn to off position and check all connections. Wait 3-5 minutes and turn ballast back on.

3. Some lamps flash and then go off.
   -Turn off the ballast and check lamps that do not flash. If situation continues, replace lamps that do not light. Wait 3-5 minutes and turn ballast back on.

4. The ballast has a feature to test the lamps. You must test one lamp at a time. Initially make sure none of the lamps are connected and ballast is turned "OFF" for this testing. Select the suspected bad lamp and connect one end of lamp to red wired endcap, and the other end of the lamp to blue wired endcap. Turn ballast "ON" to test lamp.

NOTE: Ballast will safely shut down if one or more lamps are not connected properly or if one or more lamps are defective. After ballast shut down please wait 3 to 5 minutes to turn back on.

WARNING: All electronic ballasts are susceptible to failure due to excessive heat exposure. Always mount ballast as far away possible from any external heat source such as chillers, metal halides, other ballasts, bulbs, ect. Never exceed 16 total feet of lamps. This may result in ballast failure.

03.14.05 - VHO